| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/073,927 | 02/14/2002 | Dong Hyuk Jang | MRE-0055 | 5328 |

| 34610 | 7590 | 12/27/2004 |
|---|---|---|

FLESHNER & KIM, LLP
P.O. BOX 221200
CHANTILLY, VA 20153

| EXAMINER |
|---|
| KIM, CHONG R |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2623 | |

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | Application No. | Applicant(s) |
|---|---|---|---|
| **Office Action Summary** | | 10/073,927 | JANG, DONG HYUK |
| | | Examiner | Art Unit |
| | | Charles Kim | 2623 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,9-11 and 13-15* is/are rejected.

7)☒ Claim(s) *4,8,12 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All    b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *2/14/02*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1.      Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

      Regarding claims 1, 2, and 5, the phrase "i.e." renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.      Claims 1-3, 5-7, 9-11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamamoto U.S. Patent No. 5,261,008 ("Yamamoto") and Knight et al., U.S. Patent No. 5,261,008 ("Knight").

Referring to claim 1, Yamamoto discloses a fingerprint image acquisition apparatus

including a fingerprint sensing device unit, a CCD device unit, and an image processing unit

(col. 3, lines 35-68), the image processing unit comprising:

a.      a controller for dividing a fingerprint image into a plurality of unit blocks with a

predetermined size (col. 6, lines 39-40 and figure 1); and

b.      a process executed by the controller, for dividing the fingerprint image as a center

region (H) and a peripheral region (A-G, I-O), each including a predetermined number of unit

blocks, and subdividing the unit block of the center region into at least two or more subdivided

blocks (a-p) [col. 6, lines 40-43 and figure 1].

Yamamoto does not explicitly disclose an A/D converting unit for converting and

outputting the fingerprint image outputted from the CCD device unit into a digital signal, an

image buffer for storing the digital signal from the A/D converting unit, a controller for watching

a state of the image buffer (whether the fingerprint image is inputted and stored to the image

buffer), and storing the fingerprint image to a video memory if the storage of the fingerprint

image is confirmed. However, these features were exceedingly well known in the art. For

example, Knight discloses a fingerprint image acquisition apparatus comprising an A/D

converting unit for converting and outputting a fingerprint image outputted from a CCD device

unit into a digital signal, an image buffer for storing the digital signal from the A/D converting

unit, a controller for watching a state of the image buffer (whether the fingerprint image is

inputted and stored to the image buffer), and storing the fingerprint image to a video memory if

the storage of the fingerprint image is confirmed (col. 5, lines 60-68).

Yamamoto and Knight are combinable because they are both concerned with fingerprint image acquisition systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Yamamoto to include the teachings of Knight. The suggestion/motivation for doing so would have been to facilitate the processing of the fingerprint image by providing the image in digitized form, and storing the image for comparison/identification purposes. Therefore, it would have been obvious to combine Yamamoto with Knight to obtain the invention as specified in claim 1.

Referring to claim 2, Yamamoto and Knight do not explicitly disclose that the fingerprint image is divided into the size of 8 X 6, unit blocks of 48 all. Instead, Yamamoto discloses that the fingerprint image is divided into the size of 5 X 3 unit blocks. The Examiner notes that it would have been obvious to a person of ordinary skill in the art to modify Yamamoto and Knight's fingerprint image so that it is divided into 8 X 6 blocks, since no new or unexpected results are seen to be attained by having the fingerprint image divided into 8 X 6 blocks rather than 5 X 3 blocks.

Referring to claim 3, Yamamoto further discloses that the center region is set into at least one region (H) [figure 1].

Referring to claim 5, Yamamoto discloses a fingerprint image acquisition apparatus including a fingerprint sensing device unit, a CCD device unit, and an image processing unit (col. 3, lines 35-68), the image processing unit comprising:

a.      a controller for dividing the fingerprint image into a plurality of unit blocks (A-O) with a predetermined size (col. 6, lines 39-43 and figure 1);

b.      a process executed controller, for setting a section of predetermined subdivided blocks (a-p) [col. 6, lines 39-43];

c.      a process executed by the controller, for dividing the fingerprint image into a predetermined size of center region including a predetermined number of unit blocks (H) [col. 6, lines 39-43 and figure 1];

d.      a process executed by the controller, for dividing the fingerprint image into a peripheral region including a predetermined number of unit blocks (A-G, I-O) [col. 6, lines 39-43 and figure 1].

Yamamoto does not explicitly disclose an A/D converting unit for converting and outputting the fingerprint image outputted from the CCD device unit into a digital signal, an image buffer for storing the digital signal from the A/D converting unit, a controller for watching a state of the image buffer (whether the fingerprint image is inputted and stored to the image buffer), and storing the fingerprint image to a video memory if the storage of the fingerprint image is confirmed, and a process executed by the controller for setting a size of the fingerprint image frame. However, these features were exceedingly well known in the art. For example, Knight discloses a fingerprint image acquisition apparatus comprising an A/D converting unit for converting and outputting the fingerprint image outputted from the CCD device unit into a digital signal, an image buffer for storing the digital signal from the A/D converting unit, a controller for watching a state of the image buffer (whether the fingerprint image is inputted and stored to the image buffer), and storing the fingerprint image to a video memory if the storage of the fingerprint image is confirmed, and a process executed by the controller for setting a size of the fingerprint image frame (col. 5, lines 60-68).

Yamamoto and Knight are combinable because they are both concerned with fingerprint image acquisition systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Yamamoto to include the teachings of Knight. The suggestion/motivation for doing so would have been to facilitate the processing of the fingerprint image by providing the image in digitized form with a set size, and storing the image for comparison/identification purposes. Therefore, it would have been obvious to combine Yamamoto with Knight to obtain the invention as specified in claim 5.

Referring to claim 6, Yamamoto further discloses that the unit blocks of the center region (H) are divided into at least two or more subdivided blocks (a-p) and the peripheral region is divided into a predetermined unit blocks (A-G, I-O) by the controller [col. 6, lines 39-43 and figure 1].

Referring to claim 7, see the rejection of at least claim 3 above.

Referring to claim 9, Knight discloses a fingerprint image acquisition method comprising the steps of confirming whether the fingerprint image generated by contacting a finger on a surface of a fingerprint sensing device unit is inputted and stored to an image buffer (col. 5, lines 60-68).

Knight does not explicitly disclose that the fingerprint image is divided into a predetermined number of unit blocks if it is confirmed that the fingerprint image is stored to the image buffer. However, this feature was exceedingly well known in the art. For example, Yamamoto discloses the step of dividing a fingerprint image into a predetermined number of unit blocks if it is confirmed that the fingerprint image is stored (col. 4, lines 31-34 and col. 6, lines 39-43).

Yamamoto further discloses the steps of setting the divided fingerprint image into a center region (H) and a peripheral region (A-G, I-O), each region having a predetermined number of unit blocks, and subdividing the respective unit blocks of the center region into a predetermined number of subdivided blocks (a-p), thereby obtaining the differentiated images at the center region and the peripheral region (col. 6, lines 39-43 and figure 1).

Knight and Yamamoto are combinable because they are both concerned with fingerprint image acquisition systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Knight to include the teachings of Yamamoto. The suggestion/motivation for doing so would have been to provide an accurate fingerprint verification process using a small amount of data, thereby enhancing the flexibility of the fingerprint imaging system (Yamamoto, col. 1, lines 50-54). Therefore, it would have been obvious to combine Knight with Yamamoto to obtain the invention as specified in claim 9.

Referring to claim 10, see the rejection of at least claim 6 above.

Referring to claim 11, see the rejection of at least claim 3 above.

Referring to claim 13, Knight discloses a fingerprint image acquisition method comprising the steps of:

a.      confirming whether the fingerprint image generated by contacting a finger on a surface of a fingerprint sensing device unit is inputted and stored to an image buffer (col. 5, lines 60-68); and

b.      setting a size of a fingerprint image frame if it is confirmed that the fingerprint image is stored to the image buffer (col. 5, lines 60-68).

Knight does not explicitly disclose the steps of dividing the fingerprint image into a plurality of unit blocks with a predetermined size, setting a predetermined subdivided block section, dividing the fingerprint image into a predetermined size of center region including a predetermined number of unit blocks, dividing the fingerprint image into a peripheral region including a predetermined number of unit blocks. However, these features were exceedingly well known in the art. For example, Yamamoto discloses the steps of dividing a fingerprint image into a plurality of unit blocks with a predetermined size (figure 1), setting a predetermined subdivided block section (a-p), dividing the fingerprint image into a predetermined size of center region including a predetermined number of unit blocks (H), dividing the fingerprint image into a peripheral region including a predetermined number of unit blocks (A-G, I-O) [col. 6, lines 39-43 and figure 1].

Knight and Yamamoto are combinable because they are both concerned with fingerprint image acquisition systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of Knight to include the teachings of Yamamoto. The suggestion/motivation for doing so would have been to provide an accurate fingerprint verification process using a small amount of data, thereby enhancing the flexibility of the fingerprint imaging system (Yamamoto, col. 1, lines 50-54). Therefore, it would have been obvious to combine Knight with Yamamoto to obtain the invention as specified in claim 13.

Referring to claim 14, see the rejection of at least claim 6 above.

Referring to claim 15, see the rejection of at least claim 3 above.

### *Allowable Subject Matter*

3.      Claims 4, 8, 12, 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.      Yano U.S. Patent No. 5,117,294 discloses a method that divides an image into blocks and subdivides the blocks in the center region into blocks that are smaller than the blocks in the peripheral region (col. 2, lines 52-58 and figures 3-4).

b.      Takeda et al. U.S. Patent No. 6,707,934 discloses a method for dividing a fingerprint image into blocks that segments the image into a center region and a peripheral region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ck
December 21, 2004

Jon Chang
Primary Examiner